

ABSTRACT

METHOD FOR FABRICATION OF MAGNETIC WRITE HEAD WITH SELF ALIGNED POLES

A method for fabrication of magnetic write heads for disk drives in which a P1
5 layer is formed having a P1 Protrusion, the P1 Protrusion having a longitudinal reference
axis. A gap layer is deposited on the P1 Protrusion and a layer of fill material is deposited
on the gap layer. The fill material layer is shaped to form a mold which surrounds a
hollow which is aligned with the longitudinal axis of the P1 Protrusion. This hollow in
the fill material layer is filled with P2 pole material to form a P2 pole which is then
10 automatically substantially aligned with the longitudinal axis of the P1 Protrusion.

**METHOD FOR FABRICATION OF MAGNETIC WRITE HEAD WITH SELF
ALIGNED POLES**

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THIS CORRESPONDENCE CHART IS FOR EASE OF UNDERSTANDING
AND INFORMATIONAL PURPOSES ONLY, AND DOES NOT FORM A PART OF
THE FORMAL PATENT APPLICATION.

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|----|----|----------------------------|
| 20 | 2 | longitudinal axis |
| | 20 | P1 |
| | 22 | N3 high moment layer |
| | 24 | P1 Protrusion layer |
| | 26 | P1 Protrusion |
| 25 | 28 | gap layer |
| | 30 | SiO2 fill |
| | 32 | SiO2 fill protrusion |
| | 34 | RIE masking layer |
| | 35 | opening |
| 30 | 36 | RIE mask |
| | 38 | hollow shaft |
| | 39 | mold mask |
| | 40 | endpoint layer |
| | 42 | P2 |
| 35 | 44 | mushroom portion |
| | 46 | flat top pole portion |
| | 48 | write gap |
| | 50 | P1/gap/P2 structure |
| | 52 | track width |
| 40 | 54 | second fill material layer |
| | 56 | Al2O3 protrusion |